

## **REMARKS**

### **1. Introduction**

In the pending Office Action, the Examiner rejected Claims 1-50, which were the claims as originally filed. By this Amendment and Response, Applicants have amended Claims 1, 11, 18, 27, 34, 44, 45 and 46. Claims 1-50 are pending in this application.

As an initial matter, the Examiner erroneously stated that this application names joint inventors and proceeded with reminders regarding certain obligations under 37 CFR 1.56. However, this application names a single inventor, Dr. Kenneth N. Han.

The Examiner rejected Claims 1-50 under 35 USC 103(a) as being unpatentable over Han et al., U.S. Patent No. 5,542,957 ("the Han 957 Patent"). The Examiner characterized the Han 957 Patent as claiming a method of recovering platinum group metals in a leach solution containing ammonium salts of halogen, sulfuric acid and an oxidant. The Examiner concluded that it was obvious that this leaching solution was formed by combining platinum group metals, ammonium salts of halogen, sulfuric acid and an oxidant, as in independent Claims 1 and 18.

The Examiner also rejected Claims 1-50 under 35 USC 103(a) as being unpatentable over Han et al., U.S. Patent No. 5,328,669 ("the Han 669 Patent"). The Examiner characterized the Han 669 Patent as claiming a method for extracting precious metals by a leaching process comprising charging precious-metal bearing materials, water, a halide and ammonium ions heated under oxidizing conditions. The Examiner then concluded that such a disclosure rendered obvious Applicant's claimed steps of contacting and recovering in Claim 1, as well as the steps of combining and separating.

Finally, the Examiner rejected Claims 1-50 under the judicially created doctrine of obviousness-type double patenting over Claims 1-16 of the Han 957 Patent and over Claims 1-22 of the Han 669 Patent, based on the same conclusions and arguments set forth above for the rejections under 103(a).

### **2. The Pending Application Is A Different Invention From Dr. Han's Earlier Issued Patents.**

The inventor of the pending application, Dr. Kenneth N. Han, is one of the named inventors of both the Han 957 Patent and the Han 669 Patent. Although these prior two patents

represented significant advances over the existing art relating to recovering certain metals from source materials, the pending application is a different invention.

For example, the Han 957 Patent generally discloses a method of recovering platinum group metals and rhenium from source materials through a leaching solution comprising ammonium salts, halogen salts, sulfuric acid and water. See Han 957 Patent, Col. 3, ll. 41-50. To recover the platinum group metals, the source material and leaching solution were placed in contact with gaseous oxygen at significantly elevated pressures (from no less than 20 psig up to 1,300 psig). Id., Col. 4, ll.10-15 (“between 20 and 400 psig”); Independent Claim 1 (“about 30 psig to about 1300 psig”); Independent Claim 9 (“at least 30 psig up to about 1,300 psig”); Examples 1-8 (between 87 psig and 116 psig). In each of the Examples, oxygen gas was introduced into a highly pressurized autoclave to provide the oxidizing conditions. The Han 957 Patent provided an advantage over other methods of recovering platinum group metals by eliminating the need for cyanide and reducing the use of strong acids. However, the Han 957 Patent also required the higher pressures, which limited its applicability in larger scale operations.

Similarly, the Han 669 Patent generally discloses a method of extracting platinum group metals, gold and silver from source materials through a leaching solution comprising elemental halogens, halides or halogen salts (a “key solvent”), ammonium salts, and water. See Han 669 Patent, Col. 3, ll. 14-38; Col. 4, ll. 8-11. As with the Han 957 Patent, the Han 669 Patent also required elevated pressures, as in an autoclave. See, e.g., the Han 669 Patent, Col. 3, ll.20-24 (“from about 30 psig to about 1300 psig”); Col. 5, ll. 1-4 (“the typical pressure to be employed is between 30 and 1300 psig”); Independent Claims 1, 10 (“from about 30 psig to about 1300 psig”) and the Examples, Col.5, l. 20 - Col. 10, l. 26 (145 psig). Again, the Han 669 Patent provided an advantage over other methods of extracting platinum group metals, gold and silver by eliminating the use of cyanide and reducing the use of strong acids. However, like the Han 957 Patent, the Han 669 Patent required the use of these significantly elevated pressures.

The pending application describes a different invention. As set forth in the Specification, the pending application is directed to the recovery of precious metals from a variety of sources using a solution comprising ammonium salt, halogen salts and an oxidant in a reaction zone

having significantly lower pressures and temperatures than the cited art. For example, independent Claims 1, 18 and 34 each recite a pressure in the reaction zone of less than approximately 20 psig, while dependent claims 11, 27, 44, 45 and 46 each recite, among other things, a pressure in the reaction zone of about ambient pressure. By reducing the pressure required for the leaching process, and thereby eliminating the requirement of a high pressure, relatively small volume vessel such as an autoclave, Applicant's process represents a significant advantage over the cited art.

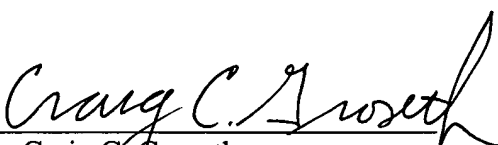
Applicant's claims distinguish the cited art on additional grounds, as well. For example, dependent Claims 9, 25 and 42 recite the introduction of a gaseous oxidant in the form of two liquid reagents, with further dependent Claims 10, 26 and 43 reciting specific liquid reagents. Also, Dependent Claims 8, 24 and 41 recite specific oxidants other than gaseous oxygen that are not disclosed in the cited art.

### 3. CONCLUSION

For all of the foregoing reasons, Applicant respectfully submits that the pending claims are in condition for allowance and respectfully request the same. If the Examiner believes that a telephone conference would facilitate the prosecution of this application, the undersigned attorney is available at the telephone number listed below.

Respectfully submitted,

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